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Book Review

D. Bambusi, G. Gaeta, and M. Cadoni (eds.), Proceedings of the International Conference SPT 2001, Symmetry and Perturbation Theory, Cala Gonone, Sardinia, Italy, 6-13 May 2001. Singapore et al., World Scientific 2001. XI, 247 pp. $49.00; ISBN 981-02-4793-1

Theme of the book under review concerns the role of symmetry in dynamical systems models as these occur in various branches of science. A perturbative point of view is taken, where the symmetry can be either preserved or broken. The book contains the proceedings of an interdisciplinary conference with over 50 participants from mathematics, physics, and chemistry. A special session was devoted to Louis Michel, who died by the end of 1999, organized by Boris Zhilinsky. The best way to give an impression of this nice meeting is to let the table of contents speak for itself:

1. Geometry and dynamics of hyperelliptically separable systems (S. Abenda);
2. Multiple Hopf bifurcation in problems with $O(2)$ symmetry: Kuramoto-Sivashinski equation (F. Amdjadi);
3. Sternberg-Chen theorem for equivariant Hamiltonian vector fields (G. R. Belitskii and A. Ya. Kopanskii);
4. A functional analysis approach to Arnold diffusion (M. Berti);
5. The symplectic Evans matrix and solitary wave instability (T. Bridges and G. Derks);
6. Classical symmetries for a Boussinesq equation with nonlinear dispersion (M. S. Bruzón,M. L. Gandarias, and J. Ramirez);
7. Pseudo-normal forms and their applications (A. Delshams and J. Tomás Lázaro);
8. Periodic orbits of Langmuir's atom (F. Diacu and E. Pérez-Chavela);
9. Heteroclinic cycles and wreath product symmetries (A. P. S. Dias, B. Dionne, and I. Stewart);
10. Linearizing resonant normal forms (G. Gaeta);
11. Symmetry analysis and reduction of the Schwarz-Korteweg-de Vries equation in $(2n + 1)$ dimensions (M. L. Gandarias,M. S. Bruzón, and J. Ramirez);
12. Tori breakdown in coupled map lattices (C. Giberti);
13. Evolution of the universe in two Higgs-doublets standard models (Yu. M. Gufan, O. D. Lalakulich, G. M. Vereshov, and G. Sartori);
14. Possible ground states of D-wave condensates in isotropic space through geometric invariant theory (Yu. M. Gufan, A. V. Popov, G. Sartori, V. Talamini, G. Valente, and E.B. Vinberg);
15. Parent phase as a zero approximation in phase transition theory (Yu. M. Gufan, I. A. Sergienko, and M. B. Stryukov);
16. Symmetry and reduction of the $2 + 1$ dimensional variable coefficient Burgers equation (F. Güngör);
17. A two-dimensional version of the Camassa-Holm equation (H.-P. Kruse, J. Scheurle, and W. Dru);
18. C^∞ symmetries and equations with symmetry algebra $\mathcal{SL}(2, \mathbf{R})$ (C. Muriel and J. L. Romero);
19. Generalizations of Gordon's theorem (N. Nekhoroshev);
20. Moving frames: a brief survey (P. J. Olver);
21. Critical point theory and Hamiltonian dynamics around critical elements (J.-P. Ortega and T. S. Ratiu);
22. Computing invariant manifolds of perturbed dynamical systems (J. Palacián and P. Yanguas);
23. Periodic solutions for resonant nonlinear PDEs (S. Paleari);
24. A symmetric normal form for the Fermi Pasta Ulam chain (B. Rink);
25. One-dimensional infinite symmetries, boundary conditions, and local conservation laws (V. Rosenhaus);
26. Normal forms, geometry, and dynamics of atomic and molecular systems with symmetry (D. Sadovskii);
27. Higher order resonance in a two degrees of freedom Hamiltonian system (J. M. Tuwankotta and F. Verhulst);
28. Stability of Hamiltonian relative equilibria by energy methods (C. Wulff, G. Patrick, and M. Roberts);
29. Topologically unavoidable degeneracies in band structure of solids (J. Zak);
30. Symmetry, perturbation theory, and Louis Michel (B. Zhilinskii).

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